Food and Agriculture Organization of the United Nations

World Health Organization

**Joint FAO/WHO Expert Committee on Food Additives**
**Fifty-seventh meeting**
**Rome, 5-14 June 2001**

# SUMMARY AND CONCLUSIONS

A meeting of the Joint FAO/WHO Expert Committee on Food Additives (JECFA) was held in Rome, Italy, from 5 to 14 June 2001. The purpose of the meeting was to evaluate certain food additives and contaminants.

Mrs. I. Meyland, Senior Scientific Adviser, Danish Veterinary and Food Administration, Søborg, Denmark, served as chairman and Professor R. Walker, Emeritus Professor of Food Science, School of Biological Sciences, University of Surrey, Guildford, Surrey, United Kingdom, served as vice-chairman.

Dr J.L. Herrman, International Programme on Chemical Safety, World Health Organization and Dr. Manfred Luetzow, Food Quality and Standards Service, Food and Nutrition Division, Food and Agriculture Organization of the United Nations, served as joint secretaries.

The present meeting was the fifty-seventh in a series of similar meetings. The tasks before the Committee were (a) to elaborate further principles for evaluating the safety of food additives and contaminants; (b) to assess certain food additives, flavouring agents, and contaminants; and (c) review and prepare specifications for selected food additives.

The report of the meeting will appear in the WHO Technical Report Series. Its presentation will be similar to that of previous reports, namely, general considerations, comments on specific substances, and recommendations for future work. An annex will include detailed tables (similar to the tables in this report) summarizing the main conclusions of the Committee in terms of acceptable daily intakes (ADIs) and other toxicological recommendations. Information on specifications for the identity and purity of certain food additives examined by the Committee will also be included.

The participants in the meeting are listed in Annex 1. Further information required or desired is listed in Annex 2. Items of a general nature that contain information that the Committee would like to disseminate quickly are included in Annex 3. Draft report items on the contaminants that were evaluated are included in Annex 4.

Toxicological monographs or monograph addenda on most of the substances that were considered will be published in WHO Food Additives Series No. 48.

Specifications for the identity and purity of the compounds listed in Annex 2 marked as N; N,T; R; or R,T will be published in FAO Food and Nutrition Paper Series 52, Addendum 9. Specifications for substances marked as S and S,T have been published previously in that series. However, if these specifications have not been adopted as Codex Advisory Specifications, they will be re-published in FAO Food and Nutrition Paper Series No. 52, Addendum 9.

*Corrected version (corrections are on pages 6 and 16)*

## Acceptable daily intakes (ADIs), other recommendations, and information on specifications

### 1. Food additives evaluated toxicologically

| Food additive | Specifications[a] | Acceptable daily intake (ADI) and other toxicological recommendations |
|---|---|---|
| **Emulsifiers** | | |
| Diacetyltartaric and fatty acid esters of glycerol | R | 0-50 mg/kg bw (temporary)[b] |
| Tartaric, acetic and fatty acid esters of glycerol, mixed | W[c] | ADI withdrawn[c] |
| Quillaia extracts | R, T[b] | 0-5 mg/kg bw (temporary)[b] |
| **Enzyme preparation** | | |
| Invertase from *Saccharomyces cerevisiae* | N | Acceptable[d] |
| **Food colours** | | |
| ß-Carotene from *Blakeslea trispora* | N,T[b] | 0-5 mg/kg bw (group ADI with synthetic ß-carotene) |
| Curcumin | R | 0-1 mg/kg bw (temporary)[b] |
| **Food salts** | | |
| Calcium dihydrogen diphosphate | N | Included in the maximum tolerable daily intake of 70 mg/kg bw for phosphates, diphosphates, and polyphosphates |
| Monomagnesium phosphate | N,T[b] | |
| Sodium calcium polyphosphate | N | |
| Trisodium diphosphate | N,T[b] | |
| **Glazing agent** | | |
| Hydrogenated poly-1-decene | R | 0-6 mg/kg bw |
| **Preservative** | | |
| Natamycin (pimaricin) | N,T[b] | 0-0.3 mg/kg bw |
| **Sweetening agent** | | |
| D-Tagatose | S | 0-80 mg/kg bw |
| **Thickening agents** | | |
| Carrageenan | R | ADI "not specified"[e] (group ADI for carrageenan and processed *Eucheuma* seaweed) |
| Processed *Eucheuma* seaweed | R | |
| Curdlan | R | ADI "not specified"[e] |
| **Miscellaneous substances** | | |
| Acetylated oxidized starch | N, R[f] | ADI "not specified"[e] |
| α-Cyclodextrin | N | ADI "not specified"[e] |
| Sodium sulfate | S | ADI "not specified"[e] |

[a]N, new specifications prepared; R, existing specifications revised; S, specifications exist, revision not considered or required; T, the existing, new, or revised specifications are tentative and new information is needed; W, existing specifications withdrawn.

[b]See Annex 2.

[c]The ADI was withdrawn because the specifications for tartaric, acetic and fatty acid esters of glycerol, mixed, were combined with those of diacetyltartaric and fatty acid esters of glycerol under the latter name at the fifty-first meeting (WHO Technical Report Series, No. 891, 2000).

[d]Invertase from *Saccharomyces cerevisiae* that meets the specifications developed at the present meeting was considered to be acceptable because *S. cerevisiae* is commonly used in the preparation of food. Its use should be limited by Good Manufacturing Practice.

[e]ADI "not specified" is used to refer to a food substance of very low toxicity which, on the basis of the available data (chemical, biochemical, toxicological and other) and the total dietary intake of the substance arising from its use at the levels necessary to achieve the desired effects and from its acceptable background levels in food, does not, in the opinion of the Committee, represent a hazard to health. For that reason, and for the reasons stated in the individual evaluations, the establishment of

an ADI expressed in numerical form is not deemed necessary. An additive meeting this criterion must be used within the bounds of good manufacturing practice, i.e. it should be technologically efficacious and should be used at the lowest level necessary to achieve this effect, it should not conceal food of inferior quality or adulterated food, and it should not create a nutritional imbalance.

[f] The new specifications for Acetylated Oxidized Starch were integrated into the revised specifications for Modified Starches.

## 2. Food additives considered for specifications only

| Food Additive | Specification[a] | Food Additive | Specification[a] |
|---|---|---|---|
| Acesulfame K (potassium salt) | R | Pectins | R |
| Blackcurrant extract | R | Smoked flavourings | R |
| Oxystearin | W | Tagetes extract | R |
| DL-Malic Acid | R[b] | | |

[a] N, new specifications prepared; R, existing specifications revised; S, specifications exist, revision not considered or required; T, the existing, new, or revised specifications are tentative and new information is needed; W, existing specifications withdrawn.

[b] The "call for data" asked for information on L-malic acid. However, no information about the uses of L-malic acid, other than its well-established use as a flavouring agent was received. As DL- and L-malic acid are different compounds made by different manufacturing processes, the specifications for DL-malic acid were corrected, and the reference to the specifications for L-malic acid were removed.

## 3. Revision of heavy metals limits for food additives

At its fifty-fifth meeting, the Committee began its implementation of a systematic five-year programme to replace the outdated test for heavy metals (as lead) in all existing food additive specifications with appropriate limits for individual metals of concern. Proposed lead and arsenic limits for 43 emulsifiers were established. As no alternative proposals were received by the deadline for submission of data for the present meeting, the new proposed limits were adopted, replacing those published in FAO Food and Nutrition Paper 52 and its addenda 1 to 7.

The second group of substances, considered at the present meeting, included 10 anticaking agents, 17 flavour enhancers, 10 sweetening agents, and 13 thickening agents. In response to the call for data, proposed limits and supporting data were received for sodium ferrocyanide.

The proposed changes to the current limits were as follows

- Limits for arsenic were deleted except for ferrocyanides of calcium, potassium and sodium, for which a limit of 3 mg/kg was proposed.
- Proposed limits for lead for the thickening agents and magnesium oxide were 2 mg/kg, for flavour enhancers and sweeteners 1 mg/kg, for phosphates 4 mg/kg, and for silicate anticaking agents 5 mg/kg.
- No limits were proposed for cadmium or mercury, as there were not concerns for their presence in any of the substances under review.
- Limits for heavy metals (as lead) were deleted.

Comments on the Committee's new proposed limits are invited. If alternative values and supporting data are not received by the deadline for submission of data for the fifty-ninth meeting, the proposed metal limits will be adopted and supersede the existing limits, replacing those published in FAO Food and Nutrition Paper 52 and its addenda 1 to 8.